



Patent  
Attorney Docket No. 005950-845

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of

Jeremy E. Dahl et al.

Application No.: 10/758,679

Filing Date: January 15, 2004

Title: LUMINESCENT HETERODIAMONDOIDS AS BIOLOGICAL LABELS

Group Art Unit: 1712

Examiner:

Confirmation No.: 4958

**SECOND  
INFORMATION DISCLOSURE STATEMENT  
TRANSMITTAL LETTER**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

Enclosed is a **SECOND** Information Disclosure Statement and accompanying form PTO-1449 for the above-identified patent application.

- ☒ No additional fee for submission of an IDS is required.
- ☐ The fee of \$180.00 (1806) as set forth in 37 C.F.R. § 1.17(p) is also enclosed.
- ☐ A statement under 37 C.F.R. § 1.97(e) is also enclosed.
- ☐ A statement under 37 C.F.R. § 1.97(e), and the fee of \$180.00 (1806) as set forth in 37 C.F.R. § 1.17(p) are also enclosed.
- ☐ Charge \_\_\_\_\_ to Deposit Account No. 02-4800 for the fee due.
- ☐ A check in the amount of \_\_\_\_\_ is enclosed for the fee due.
- ☐ Charge \_\_\_\_\_ to credit card. Form PTO-2038 is attached.

The Director is hereby authorized to charge any appropriate fees under 37 C.F.R. §§ 1.16, 1.17 and 1.21 that may be required by this paper, and to credit any overpayment, to Deposit Account No. 02-4800. This paper is submitted in duplicate.

Respectfully submitted,

BURNS, DOANE, SWECKER & MATHIS, L.L.P.

P.O. Box 1404  
Alexandria, Virginia 22313-1404  
(650) 622-2300

By Stephen F. Powell

Stephen F. Powell  
Registration No. 43,014

Date: 12-30-04



**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Patent Application of	)	
Dahl et al.	)	
	)	Group Art Unit: 1712
Application No.: 10/758,679	)	
	)	Examiner:
Filed: January 15, 2004	)	
	)	Confirmation No.: 4958
For: LUMINESCENT	)	
HETERODIAMOINDOIDS AS		
BIOLOGICAL LABELS		

**SECOND INFORMATION DISCLOSURE STATEMENT**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

In accordance with the duty of disclosure as set forth in 37 C.F.R. § 1.56, the accompanying information is being submitted in accordance with 37 C.F.R. §§ 1.97 and 1.98.

Pursuant to 37 C.F.R. § 1.98, a copy of each of the documents cited is enclosed. However, copies of the listed U.S. patents and U.S. patent application publications are not enclosed since it is no longer required according to the July 11, 2003 waiver of the requirement for copies of cited U.S. patents and U.S. patent application publications in national patent applications filed after June 30, 2003 and international applications entering the national stage under 35 U.S.C. § 371 after June 30, 2003.

The documents are being submitted within three (3) months of the filing or entry of the national stage of this application or before the first Office Action on the merits, whichever is later. Since these documents are being filed within the time period set forth in 37 C.F.R. § 1.97(b), no fee or statement is required.

To assist the Examiner, the documents are listed on the attached form PTO-1449. It is respectfully requested that an Examiner initialed copy of this form be returned to the undersigned.

Respectfully submitted,

BURNS, DOANE, SWECKER & MATHIS, L.L.P.

Date 12-30-04

By: Stephen F. Powell  
Stephen F. Powell  
Registration No. 43,014  
(650) 622-2300

P.O. Box 1404  
Alexandria, Virginia 22313-1404

# **SECOND INFORMATION DISCLOSURE STATEMENT BY APPLICANT**

(use as many sheets as necessary)

Sheet **1** of **8**

## **Complete if Known**

Application Number	10/758,679
Filing Date	January 15, 2004
First Named Inventor	Jeremy E. Dahl et al.
Examiner Name	
Attorney Docket Number	005950-845

## **U.S. PATENT DOCUMENTS**

Examiner Initials	Document Number	Kind Code (if known)	Name of Patentee or Applicant of Cited Document	Issue/Publication Date (MM-DD-YYYY)
	6,433,474	B1	Horiuchi et al.	08-13-2002
	6,376,276	B1	Oishi et al.	04-23-2002
	6,352,884	B1	Yu et al.	03-05-2002
	6,326,144	B1	Bawendi et al.	12-04-2001
	6,322,901	B1	Bawendi et al.	11-27-2001
	6,309,701	B1	Barbera-Guillem	10-30-2001
	6,235,851		Ishii, et al.	05-22-2001
	6,207,392	B1	Weiss et al.	03-27-2001
	6,151,347		Noel et al.	11-21-2000
	6,114,038		Castro et al.	09-05-2000
	6,110,276		Yu et al.	08-29-2000
	5,812,573		Shiomi et al.	09-22-1998
	5,792,256		Kuchеров et al.	08-11-1998
	5,747,118		Bunshah et al.	05-05-1998
	5,773,830		Lu et al.	06-30-1998
	5,703,896		Pankove et al.	12-30-1997
	5,701,323		Kahr et al.	12-23-1997
	5,656,828		Zachai et al.	08-12-1997
	5,653,800		Kuchеров et al.	08-05-1997
	5,632,812		Hirabayashi	05-27-1997
	5,610,405		Inushima et al.	03-11-1997
	5,608,666		Inushima et al.	03-04-1997
	5,600,156		Nishibayashi et al.	02-04-1997
	5,541,423		Hirabayashi	07-30-1996
	5,531,184		Muranaka et al.	07-02-1996
	5,504,767		Jamison et al.	04-02-1996
	5,504,323		Heeger et al.	04-02-1996
	5,478,650		Davanloo et al.	12-26-1995
	5,476,812		Kimoto et al.	12-19-1995
	5,470,505		Smith et al.	11-28-1995
	5,454,880		Saraciftci et al.	10-03-1995
	5,420,879		Kawarada et al.	05-30-1995
	5,414,189		Chen, et al.	05-09-1995
	5,389,799		Uemoto	02-14-1995
	5,382,809		Nishibayashi et al.	01-17-1995
	5,371,382		Venkatesan et al.	12-06-1994
	5,352,908		Kobashi et al.	10-04-1994
	5,349,209		Moyer et al.	09-20-1994
	5,347,147		Jones	09-13-1994
	5,331,183		Saraciftci et al.	07-19-1994
	5,306,928		Kimoto et al.	04-26-1994
	5,275,967		Taniguichi et al.	01-04-1994
	5,273,731		Anthony et al.	12-28-1993
	5,245,189		Satoh et al.	09-14-1993
	5,223,721		Iida et al.	06-29-1993
	5,210,430		Taniguchi et al.	05-11-1993
	5,210,431		Kimoto et al.	05-11-1993

Examiner Signature	Date Considered
-----------------------	--------------------

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with M.P.E.P. § 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.

# **SECOND INFORMATION DISCLOSURE STATEMENT BY APPLICANT**

(use as many sheets as necessary)

Sheet 2 of 8

**Complete if Known**

Application Number	10/758,679
Filing Date	January 15, 2004
First Named Inventor	Jeremy E. Dahl et al.
Examiner Name	
Attorney Docket Number	005950-845

**U.S. PATENT DOCUMENTS**

Examiner Initials	Document Number	Kind Code (if known)	Name of Patentee or Applicant of Cited Document	Issue/Publication Date (MM-DD-YYYY)
	5,171,632		Heeger et al.	12-15-1992
	5,144,380		Kimoto et al.	09-01-1992
	5,132,749		Nishibayashi et al.	06-21-1992
	5,117,267		Kimoto et al.	05-26-1992
	5,112,775		Iida et al.	05-12-1992
	5,075,757		Ishii et al.	12-24-1991
	5,051,785		Beetz, Jr. et al.	09-24-1991
	5,019,660		Chapman et al.	05-28-1991
	5,017,734		Baum et al.	05-21-1991
	4,950,625		Nakashima et al.	08-21-1990
	4,949,347		Satoh et al.	08-14-1990
	4,910,436		Collins et al.	03-20-1990
	4,880,613		Satoh et al.	11-14-1989
	4,638,484		Rand et al.	01-20-1987
	4,201,955		Elton et al.	05-06-1980
	3,832,332		Thompson	08-27-1974
	3,457,318		Capaldi et al.	08-22-1969
	2003/0044353	A1	Weissleder et al.	03-06-2003
	2002/0009274	A1	Gharavi	01-24-2002
	2002/0177743	A1	Dahl et al.	11-28-2002
	2003/0199710	A1	Liu et al.	10-23-2003
	2004/0054243	A1	Timken et al.	03-18-2004
	2004/0059145	A1	Liu et al.	03-24-2004
	2004/0109328	A1	Dahl et al.	06-10-2004

**FOREIGN PATENT DOCUMENTS**

Examiner Initials	Document Number	Kind Code (if known)	Country	Date of Publication (MM-DD-YYYY)	STATUS						
					Translation	Partial Translation	Eng. Lang. Summary	Search Report	IPER	Abstract	Cited in Spec
	02/058139	A2	WO	07-25-2002							
	02/057201	A2	WO	07-25-2002							
	95/06019	A1	WO	03-02-1995							
	03/050066	A1	WO	06-19-2003							
	2,545,292		DE	04-1979							
	US02/0050		WO	01-17-2002							
	01/83410	A	WO	11-08-2001							
	1 043 916	A1	EP	10-11-2002							
	1 081 747	A1	EP	03-07-2001							

Examiner Signature

Date Considered

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with M.P.E.P. § 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.

Substitute for form 1449A/PTO & 1449B/PTO				<b>Complete if Known</b>	
<b>SECOND INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  (use as many sheets as necessary)				<b>Application Number</b>	10/758,679
				<b>Filing Date</b>	January 15, 2004
				<b>First Named Inventor</b>	Jeremy E. Dahl et al.
				<b>Examiner Name</b>	
Sheet	3	of	8	<b>Attorney Docket Number</b>	005950-845

NON-PATENT LITERATURE DOCUMENTS	
Examiner Initials	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.
	Askeland, D.R., <u>The Science and Engineering of Materials</u> 2 <sup>nd</sup> Edition, pp 664-667, PWS-Kent Publishing Co., Boston, MA.
	Balaban, et al., "Systematic Classification and Nomenclature of Diamond Hydrocarbons-I", <i>Tetrahedron</i> <b>34</b> :3599-3606 (1978).
	Baugman, G.I., "Dibromination of Adamantane", (1964).
	Beck, J.S., et al., ""A New Family of Mesoporous Molecular Sieves Prepared with Liquid Crystal Templates", <i>J. Am. Chem. Soc.</i> <b>114</b> :10834-10843 (1992).
	Becker et al, "A Short Synthese of 1-azaadamantan-4-one and the 4r and 4s Isomers of 4-Amino-1-azaadamantane", <i>Synthesis</i> <b>11</b> :1080-1082 (1992).
	Beveratos, A., et al., "Single Photon Quantum Cryptography", <i>arXiv:quant-ph/0206136</i> v1 (2002)
	Bingham, R.C. et al., Chapter 18 of "Chemistry of Adamantanes", <i>Springer-Verlag</i> (1971).
	Bishop, R., et al., "Detection of Non-Conjugative Interactions in Rigid Cyclic Molecules by Using Carbon-13 N.M.R. Shift Values", <i>Aust. J. Chem.</i> <b>40</b> :249-255 (1987).
	Black, R.M. et al., "Adamantane Chemistry. Part 3. Abnormal Hypiodite Reactions of 2-Substituted Adamantan-2-ols; Synthetic Routes to 4-Oxahomo- and 2-Oxa-adamantanes, and 7-Substituted-bicyclo[3.3.1]nona-3-ols", <i>J. Chem. Soc. Perkins Trans. I</i> 410-418 (1980).
	Blaney et al, "Chemistry of Diamantane, Part II. Synthesis of 3,5-disubstituted Derivatives", <i>Synthetic Communications</i> <b>3</b> (6):435-439 (1973).
	Boudjouk et al, "Synthesis and Reactivity of 1-Silaadamantyl Systems", <i>Journal of Organometallic Chemistry</i> <b>2</b> :336-343 (1983).
	Boudjouk et al, "The Reaction of Magnesium with cis-1,3,5-Tris(bromomethyl)cyclohexane. Evidence For a Soluble Tri-grignard", <i>Journal of Organometallic Chemistry</i> <b>281</b> :C21-C23 (1985).
	Bubnov et al, "A Novel Method of Synthesis of 1-azaadamantane from 1-boraadamantane", <i>Journal of Organometallic Chemistry</i> <b>412</b> :1-8 (1991).
	Canham, L., "Gaining Light from Silicon", <i>Nature</i> <b>408</b> :411-412 (2000).
	Cao, G.Z., "Nitrogen and Phosphorus Doping in CVD Diamond", <i>Diamond</i> , edited by M.H. Nazare and A.J. Neves, INSPEC pp. 345-347 (2001).
	Chakrabarti et al., "Chemistry of Adamantane. Part II. Synthesis of 1-Adamantyloxyalkylamines", <i>Tetrahedron Letters</i> <b>60</b> :6249-6252 (1968).
	"Computation Concepts" <i>Chem3D Molecular Modeling and Analysis User's Guide</i> , Chapter 9, pages 123-144.
	Courtney, T., Johnston, D.E. McKervey, M.A. and Rooney, J.J., "The Chemistry of Diamantanes. Part 1. synthesis and Some Functionalisation Reactions", <i>J. Chem. Soc. Perkin I</i> 2691-2696 (1972).
	Dahl, J.E. et al., "Isolation and Structure of Higher Diamondoids, Nanometer-Sized Diamond Molecules", <i>Science</i> <b>299</b> :96-99 (2003).
	S. Eguchi et al. in "A novel route to the 2-aza-adamantyl system via photochemical ring contraction of epoxy 4-azahomoadamantanes," <i>J. Chem. Soc. Chem. Commun.</i> , p. 1147 (1984).
	Fernandez, M.J., et al., "NMR Study of 1-Azatricyclo[3.3.1 <sup>3-7</sup> ]decane Derivatives", <i>J. Heterocyclic Chem.</i> <b>26</b> :307-312 (1989).
	Fernandez, M.J., et al., "Synthesis, Structural and Conformational Study of 4- $\alpha$ -(or $\beta$ )-p-Chlorobenzoyloxy-1-azaadamantane Hydrochloride", <i>J. Heterocyclic Chem.</i> <b>26</b> :349-353 (1989).

Examiner Signature	Date Considered
--------------------	-----------------

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with M.P.E.P. § 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.

Substitute for form 1449A/PTO & 1449B/PTO				<b>Complete if Known</b>	
<b>SECOND INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  (use as many sheets as necessary)				<b>Application Number</b>	10/758,679
				<b>Filing Date</b>	January 15, 2004
				<b>First Named Inventor</b>	Jeremy E. Dahl et al.
				<b>Examiner Name</b>	
<b>Sheet</b>	<b>4</b>	<b>of</b>	<b>8</b>	<b>Attorney Docket Number</b>	005950-845

NON-PATENT LITERATURE DOCUMENTS	
Examiner Initials	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.
	Fleming, I., et al., "A New Oxindole Synthesis", <i>J. Chem. Soc. Perkin Trans.</i> 1:617-626 (1991).
	Fort, Jr., et al., "Adamantane: Consequences of the Diamondoid Structure", <i>Chem. Rev.</i> 64:277-300 (1964).
	Fox, M.A., et al., "Transmission of Electronic Effects by Icosahedral Carboranes; Skeletal Carbon-13 Chemical Shifts and Ultraviolet-Visible Spectra of Substituted aryl- <i>p</i> -carboranes (1,12-dicarba-closo-dodecaboranes)", <i>J. Chem. Soc., Dalton Trans.</i> 401-411 (1998).
	Fritz, G., et al., "Silicon-Carbon Compounds with a Carborundum Structure", <i>Angew. Chem. Internat. Edit.</i> 9(6) Abstract (1970).
	Fritz, G., et al., "Über die Isolierung höherer Carbosilane aus der Pyrolyse des Tetramethylsilans" <i>Z. anorg. Allg. Chem.</i> 512:103-125 (1984).
	A. Gagneux et al. in "1-Substituted 2-heteroadamantanes," <i>Tetrahedron Letters</i> No. 17, pp. 1365-1368 (1969).
	Gerzon, et al., "The Adamantyl Group in Medicinal Agents, 1. Hypoglycemic N-Arylsulfonyl-N-adamantylureas", <i>Journal of Medicinal Chemistry</i> 6(6):760-763 (1963).
	Hass, et al., Adamantoxycarbonyl, a New Blocking Group. Preparation of 1-Adamantyl Chloroformate", <i>Journal of the American Chemical Society</i> 88(9):1988-1992 (1966).
	Hahn, J.M. et al., "Strongly Enhanced Stereoselectivity in the Reduction of 5-Substituted Adamantanones by Substitution of C <sub>5</sub> by Positive Nitrogen", <i>J. Am. Chem. Soc.</i> 114:1916-1917 (1992).
	Hawley, "Condensed Chemical Dictionary", 14th ed., John Wiley & Sons, Inc., 2001.
	Heavens, O.S., "Wave Theory (1): Interference", pp 28-48 from <i>Insight into Optics</i> , John Wiley & Sons, (1991).
	Heavens, O.S., "Interaction of Radiation and Matter", pp 137-145 from <i>Insight into Optics</i> , John Wiley & Sons, (1991).
	Heavens, O.S., "Lasers", pp 244-259 from <i>Insight into Optics</i> , John Wiley & Sons, (1991).
	Hecht, E., "Lasers and Laserlight", pp 577-593 from <i>Optics</i> , Addison-Wesley Publishing Company, (1987).
	J.G. Henkel and W.C. Faith, in "Neighboring group effects in the $\beta$ -halo amines. Synthesis and solvolytic reactivity of the <i>anti</i> -4-substituted 2-azaadamantyl system," in <i>J. Org. Chem.</i> Vol. 46, No. 24, pp. 4953-4959 (1981).
	G.T. Hermanson in " <i>Bioconjugate Techniques</i> " (Academic Press, San Diego, 1996); Preface, pp. 3-16; 27-34; and 40-53.
	Jackman, R.B., "Diamond optoelectronic devices", <i>Properties, Growth and Applications of Diamond</i> , M.H. Nazare et al., editors, University of Aveiro, Portugal, pp 393-398 (2001).
	Jawdosiuk, M., et al., "Photolysis and Thermolysis of 3-Azidonoradamantane. "Anti-Bredt" Imines, 2-azaadamant-1-ene, and 4-Azaprotadamant-3-ene", <i>J. Chem. Soc. Perkin Trans</i> 1:2583-2585 (1984).
	John, P., "Toward Diamond Lasers", <i>Science</i> 292:1847-1848 (2001).
	Johnston, C., et al., "Boron Doping and Characterisation of Diamond", <i>Diamond</i> , edited by M.H. Nazare and A.J. Neves, INSPEC pp. 337-344 (2001).
	Jones, R., et al., "Theory of Aggregation of Nitrogen in Diamond", <i>Properties, Growth and Applications of Diamond</i> edited by Nazare et al., Ch. A5.1, pp 127-129 (2001)
	Kalish, R., et al., "Doping of Diamond Using Ion Implantation", <i>Diamond</i> , edited by M.H. Nazare and A.J. Neves, INSPEC pp 321-330 (2001).

Examiner Signature	Date Considered
--------------------	-----------------

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with M.P.E.P. § 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.

## SECOND INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet	5	of	8	<b>Complete if Known</b>	
				<b>Application Number</b>	10/758,679
				<b>Filing Date</b>	January 15, 2004
				<b>First Named Inventor</b>	Jeremy E. Dahl et al.
				<b>Examiner Name</b>	
				<b>Attorney Docket Number</b>	005950-845

### NON-PATENT LITERATURE DOCUMENTS

Examiner Initials	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.
	Kiflawi, I., et al., "Aggregates of Nitrogen in Diamond", <i>Properties, Growth and Applications of Diamond</i> edited by Nazare et al., Ch. A5.2, pp 130-133 (2001)
	Kiflawi, I., et al., "The Nitrogen Interstitial in Diamond", <i>Properties, Growth and Applications of Diamond</i> edited by Nazare et al., Ch. A5.3, pp 134-135 (2001)
	Koizumi, S., et al., "Ultraviolet Emission from a Diamond pn Junction", <i>Science</i> <b>292</b> :1988-1890 (2001)
	Krasutsky, P.A., et al., "A New One-Step Method for Oxaadamantane Synthesis", <i>Tetrahedron Letters</i> <b>37</b> (32):5673-5674 (1996).
	Krasutsky, P.A., et al., "Observation of a Stable Carbocation in a Consecutive Criegee Rearrangement with Trifluoroacetic Acid", <i>J. Org. Chem.</i> <b>65</b> :3926-3933 (2000).
	Kresge, C.T., et al., "Ordered mesoporous molecular sieves synthesized by a liquid-crystal template mechanism", <i>Nature</i> <b>359</b> :710-712 (1992).
	Krishnamurthy et al, "Heteroadamantanes. 2. Synthesis of 3-Heterodiamantanes", <i>Journal of Organometallic Chemistry</i> , <b>46</b> (7):1389-1390 (1981).
	Kroschwitz, J.I., ed, "Electrically Conductive Polymers" pp 174-219 from <i>High Performance Polymers and Composites</i> , John Wiley & Sons (1991)
	Kuhn, S., et al., "Diamond Colour Centres as a Nanoscopic Light Source for Scanning Near-Field Optical Microscopy", <i>Journal of Microscopy</i> <b>202</b> (1):2-6 (2001)
	Kurtsiefer, C., et al., "Stable Solid-State Source of single Photons", <i>Physical Review Letters</i> <b>85</b> (2):290-293 (2000).
	Lansbury, et al., "Some Reactions of $\alpha$ -Metalated Ethers", <i>The Journal of Organic Chemistry</i> <b>27</b> (6):1933-1939 (1962).
	Lawson, S.C., et al., "The Effect of Transition Metals (TM) on the Aggregation Kinetics of Nitrogen in Diamond" <i>Properties, Growth and Applications of Diamond</i> edited by Nazare et al., Ch. A6.2, pp 172-173 (2001)
	Liaw, D.J, et al., "Synthesis and Characterization of New Polyamides and Polyimides Prepared from 2,2-bis[4-(4-aminophenoxy)phenyl]adamantane", <i>Macromol. Chem. Phys.</i> <b>200</b> (6):1326-1332 (1999).
	Lippert, E., et al., "Darstellung und UV-Spektren einiger Fluorenon-Derivate", <i>Angew. Chem.</i> <b>71</b> :429-430 (1959).
	Lin, et al., "Natural Occurrence of Tetramantane (C <sub>22</sub> H <sub>28</sub> ), Pentamantane (C <sub>26</sub> H <sub>32</sub> ) and Hexamantane (C <sub>30</sub> H <sub>36</sub> ) in a Deep Petroleum Reservoir", <i>Fuel</i> <b>74</b> (10):1512-1521 (1995).
	Makarova, et al., "Psychotropic Activity of Some Aminoketones Belonging to the Adamantane Group" <i>Pharmaceutical Chemistry Journal</i> <b>34</b> :6 (2000).
	Marchand, A.P., "Diamondoid Hydrocarbons-Delving into Nature's Bounty", <i>Science</i> <b>299</b> (2003).
	Marchand, A.P., "Polycyclic Cage Compounds: Reagents, Substrates, and Materials for the 21 <sup>st</sup> Century", <i>Aldrichimica Acta</i> <b>28</b> (4):95-104 (1995).
	Marshall et al., "N-Arylsulfonyl-N-alkylureas", <i>Journal of Organic Chemistry</i> <b>23</b> :927-929 (1958).
	Marshall et al., "Further studies on N-Arylsulfonyl-N-alkylureas", <i>Journal of Medicinal Chemistry</i> <b>6</b> :60-63 (1963).
	McKervey, et al., "Synthetic Approaches to Large Diamondoid Hydrocarbons", <i>Tetrahedron</i> <b>36</b> :9710992 (1980).
	J.J. Meeuwissen et. al in "Synthesis of 1-phosphaadamantane," <i>Tetrahedron</i> Vol. 39, No. 24, pp. 4225-4228 (1983)

Examiner Signature		Date Considered	
--------------------	--	-----------------	--

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with M.P.E.P. § 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.



## SECOND INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet 6 of 8

**Complete if Known**

Application Number	10/758,679
Filing Date	January 15, 2004
First Named Inventor	Jeremy E. Dahl et al.
Examiner Name	
Attorney Docket Number	005950-845

**NON-PATENT LITERATURE DOCUMENTS**

Examiner Initials	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.
	Mikhailov, B.M., et al., "Organoboron Compounds", <i>J. Organometallic Chemistry</i> <b>250</b> :23-31 (1983).
	Moiseev, I.K., et al., "Reactions of Adamantanes in Electrophilic Media", <i>Russian Chem. Reviews</i> <b>68</b> (12):1001-1020 (1999).
	Mochizuki, Y, et al., "Polarizability of silicon clusters", <i>Chemical Physics Letters</i> <b>336</b> :451-456 (2001).
	Mukherjee, A.K., et al., "On the Stereochemistry of the Oxidation of 5-Phenyl-2-thiaadamantane", <i>J. Org. Chem.</i> <b>58</b> :7955-7957 (1993).
	Newton, M.E., "Neutral ( $[N_s]^0$ ) and ionized ( $[N_s]^+$ ) single substitutional nitrogen in diamond", <i>Properties, Growth and Applications of Diamond</i> , M.H. Nazare et al., editors, University of Aveiro, Portugal, pp 136-141 (2001).
	Neves A.J., et al., "Optical and EPR properties of transition metals in diamond", <i>Properties, Growth and Applications of Diamond</i> , M.H. Nazare et al., editors, University of Aveiro, Portugal, pp 167-171 (2001).
	Nordlander et al., "Solvolysis of 1-Adamantylcarbinyl and 3-Homoadamantyl Derivatives. Mechanism of the Neopentyl Cation Rearrangement", <i>Journal of the American Chemical Society</i> <b>88</b> :19 (1966).
	Okoroanyanwu, U. et al., "Alicyclic Polymers for 193 nm Resist Applications: Lithographic Evaluation", <i>Chem. Mater.</i> <b>10</b> :3329-3333 (1998).
	Park, S., et al., "endo-Fullerene and Doped Diamond Nanocrystallite-Based Models of Qubits for Solid-State Quantum Computers", <i>J. Nanoscience and Nanotechnology</i> <b>1</b> (1):75-81 (2001).
	Parker, I.D., "Carrier Tunneling and Device Characteristics in Polymer Light-Emitting Diodes", <i>J. Appl. Phys.</i> <b>75</b> (3):1656-1666 (1994).
	Pasini, D., et al. <i>Advanced Materials</i> <b>12</b> :347-351 (2000).
	Pate, B.B., "The Diamond Surface: Atomic and Electronic Structure", <i>Surface Science</i> <b>165</b> :83-142
	Pavesi, L, et al., "Optical Gain in Silicon Nanocrystals", <i>Nature</i> <b>408</b> :440-444 (2000)
	Pereira, E., "Photoconductivity in Diamond", <i>Properties, Growth and Applications of Diamond</i> , M.H. Nazare et al., editors, University of Aveiro, Portugal, pp 243-244 (2001).
	Prins, J.F., "Large Dopants in Diamond", <i>Diamond</i> , edited by M.H. Nazare and A.J. Neves, INSPEC pp 331-336 (2001).
	Radziszewski, J.G., et al., "2-Azaadamant-1-ene and 4-Azaprotadamant-3-ene", <i>J. Am. Chem.</i> <b>106</b> :7996-7998 (1984).
	Ramdas, A.K., "A1.2 Modifications to $^{12}\text{C}$ -diamond by the $^{13}\text{C}$ -isotope: Raman, Brillouin and Infrared Spectroscopy of Phonons", <i>INSPEC, Properties, Growth and Applications of Diamondoids</i> (2001).
	Ramdas, A.K., "A1.3 Electronic Excitations in Isotopically Controlled Diamonds: Infrared and Raman Spectroscopy of Acceptor-Bound Holes", <i>INSPEC, Properties, Growth and Applications of Diamondoids</i> (2001).
	Raty, J.Y., et al., "Quantum Confinement and Fullerenelike Surface Reconstructions in Nanodiamonds", <i>Physical Review Letters</i> <b>90</b> (3):037401.1-037401.4 (2003)
	Reinhardt, "Biadamantane and some of its Derivatives", <i>Journal of Organic Chemistry</i> <b>27</b> :3258-3261 (1962).
	Risch, N., et al., "Triple (Grob) Fragmentation. Retro-Mannish Reactions of 1-Aza-Adamantane Derivatives", <i>Tetrahedron Letters</i> <b>32</b> (35):4465-4468 (1991).
	Risch, N., et al., "Unusual Reorganization Reactions of 3-Azabicyclo[3.3.1]nonanes", <i>J. Am. Chem. Soc.</i> <b>113</b> :9411-9412 (1991).

Examiner  
SignatureDate  
Considered

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with M.P.E.P. § 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.

Substitute for form 1449A/PTO & 1449B/PTO			<b>Complete if Known</b>		
<b>SECOND INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  (use as many sheets as necessary)			Application Number	10/758,679	
			Filing Date	January 15, 2004	
			First Named Inventor	Jeremy E. Dahl et al.	
			Examiner Name		
Sheet	7	of	8	Attorney Docket Number	005950-845

NON-PATENT LITERATURE DOCUMENTS	
Examiner Initials	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.
	Roberts, P.J., et al., "anti-Tetramantane, a Large Diamondoid Fragment", <i>Acta. Cryst.</i> <b>B33</b> :2335-2337 (1977).
	Sasaki, T. et al., "New Highly Strained Bridgehead Imines, 2-Azaadamant-1-ene and 4-Azaprotadamant-3-ene", <i>Tetrahedron Letters</i> <b>23</b> (47):4969-4972 (1982).
	Sasaki, T., et al., "Synthesis and Acidolysis of 3-endo-Azidomethyl- and 3-endo-Azido-bicyclo[3.3.1]non-6-enes. A Novel Synthesis of 4-Azahomoadamant-4-enes", <i>J. Chem. Soc. Perkin Trans I</i> 2529-2534 (1983).
	Sasaki, T., et al., "Synthesis of Adamantane Derivatives. 42. Novel Synthesis of 5-Methylene-4-azahomoadamantane Derivatives from 2-Methyl-2-hydroxyadamantane and Their Carbon-13 Nuclear Magnetic Resonance Spectra", <i>J. Org. Chem.</i> <b>43</b> (20):3810-3813 (1978).
	Sasaki, T., et al., "Photolytic Generation of Anti-Bredt Imines from 1-Azidobicyclo[2.2.2]octane, 1-Azidobicyclo[3.3.1]nonane, and 3-Azidonoradamantane", <i>J. Org. Chem.</i> <b>48</b> (22):4067-4072 (1983).
	Sasaki et al., "Synthesis of Adamantane Derivatives. II. Preparation of Some Derivatives from Adamantylacetic Acid", <i>Bulletin of the Chemical Society of Japan</i> <b>41</b> (1):238-240 (1968).
	Sasaki et al., "Substitution Reaction of 1-Bromoadamantane in Dimethyl Sulfoxide: Simple Synthesis of 1-Azidoadamantane", <i>Journal of the American Chemical Society</i> <b>92</b> :24 (1970).
	Sasaki et al., "Synthesis of Adamantane Derivatives. 47. Photochemical Synthesis of 4-Azahomoadamant-4-enes and Further Studies on Their Reactivity in Some Cycloadditions", <i>Journal of Organometallic Chemistry</i> <b>44</b> (21):3711-3712 (1979).
	Sasaki, T., et al., "Synthesis of Adamantane Derivatives. XII. The Schmidt Reaction of Adamantane-2-one", <i>J. Org. Chem.</i> <b>35</b> (12):4109 (1970).
	Sasaki, T., et al., "Synthesis of adamantane derivatives. 39. Synthesis and acidolysis of 2-azidoadamantanes", <i>Heterocycles</i> <b>7</b> (1):315 (1977).
	Scherz, P., "Semiconductors: Chapter 4", pp 123-190, from <i>Practical Electronics for Inventors</i> , McGraw-Hill (2000).
	Scherz, P., "Optoelectronics: Chapter 5", pp 191-212, from <i>Practical Electronics for Inventors</i> , McGraw-Hill (2000).
	Service, R.F., "Can Chemists Assemble a Future for Molecular Electronics?", <i>Science</i> <b>295</b> :2398-2399 (2002).
	Stetter, et al., "Zur Kenntnis der Adamantan-carbonsaure-(1)", <i>Über Verbindungen mit Urotropin-Struktur</i> , XVII, pp. 1161-1166 (1960).
	Stetter, et al., "Ein Beitrag zur Frage der Reaktivität von Brückenkopf-Carboniumionen", <i>Über Verbindungen mit Urotropin-Struktur XXVI</i> , <i>Chem. Ber.</i> <b>96</b> :550-555 (1963).
	Stetter, et al., "Neue Möglichkeiten der Direktsubstitution am Adamantan", <i>Über Verbindungen mit Urotropin-Struktur, XLII</i> , <i>Chem. Ber.</i> <b>102</b> (10):3357-3363 (1969).
	Stetter et al., "Über Adamantan-phosphonsaure-(1)-dichlorid", <i>Über Verbindungen mit Urotropin-Struktur XLIV</i> , <i>Chem. Ber.</i> <b>102</b> (10):3364-3366 (1969).
	Stetter, et al., "Herstellung von Derivaten des 1-Phenyl-adamantans", <i>Über Verbindungen mit Urotropin-Struktur, XXXI</i> , <i>Chem. Ber.</i> <b>97</b> (12):3488-3492 (1964).
	Stetter, H., et al., "Ringschlußreaktionen ausgehend von Bicyclo[3.3.1]nonandion-(3.7) <i>Über Verbindungen mit Urotropin-Struktur, XXX</i> 3480-3487 (1964).
	Suginome, H., et al., "The Replacement of the Carbonyl Group of Adamantanone by an Oxygen or sulfur Atom and the One-step Transformation of 2-Methyladamantan-2-ol into 2-Oxa-adamantane; An Efficient New Synthesis of 2-Oxa- and 2-Thiaadamantane", <i>Synthesis</i> 741-743 (1986).

Examiner Signature	Date Considered
--------------------	-----------------

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with M.P.E.P. § 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.

# **SECOND INFORMATION DISCLOSURE STATEMENT BY APPLICANT**

(use as many sheets as necessary)

Sheet **8** of **8**

## **Complete if Known**

<b>Application Number</b>	10/758,679
<b>Filing Date</b>	January 15, 2004
<b>First Named Inventor</b>	Jeremy E. Dahl et al.
<b>Examiner Name</b>	
<b>Attorney Docket Number</b>	005950-845

## **NON-PATENT LITERATURE DOCUMENTS**

Examiner Initials	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.
	Suginome et al, "Photoinduced Transformations. 73. Transformations of Five-(and Six-) Membered Cyclic Alcohols into Five-(and Six-) Membered Cyclic Ethers-A New Method of a Two-Step Transformation of Hydroxy Steroids into Oxasteroids", <i>Journal of Organometallic Chemistry</i> <b>49</b> :3753-3762 (1984).
	Tada, K., et al., "Optical Properties and Blue and Green Electroluminescence in Soluble Disubstituted Acetylene Polymers", <i>Jpn. J. Appl. Phys.</i> <b>35</b> , part 2, No. 9A:1138-1141 (1996).
	Udding et al, "A Ring-opening Reaction of and Some Cyclisations to the Adamantane System. A Quasi-favorsky Reaction of a $\beta$ -bromoketone", <i>Tetrahedron Letters</i> <b>55</b> :5719-5722 (1968).
	Verhoeven, J.W., "From Close contact to Long-Range Intramolecular Electron Transfer", <i>Intramolecular Electron Transfer</i> , John Wiley and Sons, pp 603-644 (1999).
	von H.U. Daeniker, "206. 1-Hydrazinoadamantan", <i>Helvetica Chimica Acta</i> <b>50</b> :2008-2010 (1967).
	Yang, X. et al., "The Synthesis and Structural Characterization fo Carborane Oligomers Connected by Carbon-Carbon and Carbon-Boron Bonds Between Icosahedra", <i>Inorganica Chimica Acta</i> <b>240</b> :371-378 (1995).
	Zarda, P., "Single Photo Source ", <a href="http://scotty.quantum.physik.uni-muenchen.de/exp/sps/sum.html">http://scotty.quantum.physik.uni-muenchen.de/exp/sps/sum.html</a> , on-line documents, 11 pages (2001)
	Zheng, S., et al, "Novel Blue Light Emitting Polymers", <i>Polymer Preprints</i> <b>41</b> (1):822-823 (2002).

Examiner Signature	Date Considered
-----------------------	--------------------

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with M.P.E.P. § 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.